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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, BENJAMIN P

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,996	Applicant(s) HERMANS ET AL.	
	Examiner BENJAMIN P. LEE	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-12 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-12 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant has amended claim 1 and added new claim 18.

Response to Arguments

2. Applicant's arguments with respect to claims 1-6, 8-12 and 18 have been considered but are moot in view of the new ground(s) of rejection. With respect to claim 16, Applicant's arguments are not persuasive. Applicant argues that the transitional phrase "consisting essentially of" limits the scope of the claim to the specified materials as indicated in the MPEP § 2111.03. In response, Examiner respectfully asserts that the additional penetration resistant layers and or components of Kim do not materially alter the "basic" and novel characteristics of the invention, especially since the addition of more penetration resistant material would only increase the invention's penetration resistance and further, Applicant's specification indicates that adding additional layers of penetration resistant material is only really limited by weight and stiffness (page 3, lines 20-35). Examiner asserts that the composition of the Kim device has the same basic and novel characteristics, since additional penetration resistant layers (of various compositions) merely serve to increase penetration resistance. Applicant further argues that the wire mesh of Kim is not disclosed as being "woven". In response, Examiner asserts that the term "mesh" as used indicates a woven configuration as defined by the Cambridge Dictionary of American English at <http://dictionary.combridge.org>. With respect to claim 17, Applicant argues that the phrases "consisting of" and "at least one"

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were not interpreted by the Examiner properly, since the language is meant to recite one layer of a woven fabric, or a plurality of layers of a woven fabric, and one textile layer, or a plurality of textile layers, but not "other" materials. In response, Examiner respectfully asserts that the term "consisting essentially of" limits the scope of the claim to the specified materials or steps except for those that do not materially affect the basic and novel characteristics of the claimed invention as per MPEP § 2111.03 and therefore, since "at least one" implies additional of the claimed subject matter, the phrase is only proper if "more than one" of the claimed subject matter "does not materially affect the basic and novel characteristics of the claimed invention" as per MPEP § 2111.03. Similarly, "consisting essentially of" does not require a prior art teaching be limited to only the claimed elements if the additional elements do not materially affect the basic and novel characteristics of the claimed invention. Note that MPEP states that "For the purposes of searching and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising".

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has amended claim 1 to negatively limit the stab resistant insert to being formed without plate-like elements. Applicant is reminded that the mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement as per MPEP § 2173.05i. In this case, Applicant's disclosure does not appear to originally support the claimed absence of plate-like elements.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (U.S. Patent 6,962,739).

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5. In regards to claims 16, and 17, Kim et al (henceforth referred to as Kim) disclose a stab-resistant insert for protective textile, said insert comprising:

- at least one metal layer of a woven fabric with metal cords or metal wires. (item 52 of Kim figure 33a following, col. 22, lines 54-67);
- and at least one textile layer (item 15). Note that at col. 3, lines 33-35, Kim teaches that the base material or the connecting material may be a non-woven fabric and further that item 15 of figure 33a is a “connecting material”, col. 22, lines 54-67;
- said textile layer being in contact with and being connected to said metal layer by an adhesive (item 153 and col. 22, lines 54-67);
- wherein said textile layer comprises a non-woven material (col. 3, lines 33-35). Note that Kim teaches that the base material or the connecting material may be a non-woven fabric and further that item 15 of figure 33a is a “connecting material”, col. 22, lines 54-67;
- metal cords or metal wires being the only stab-resistant elements. Note that each element of the armor disclosed by Kim is inherently resistant to stabbing, slicing, penetration etc. to at least some degree. Applicant is reminded that even if the stated purpose of a component is unrelated to armor or penetration resistance, any of the components taught by Kim are capable of providing some degree of resistance to a ballistic projectile or the stabbing point of a knife;

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- Note that requiring the stab-resistant insert to consist of “at least” various components fails to limit the scope of the claim to consisting of “only” the claimed subject matter, since “at least” implies that the apparatus may include other components;
- Note that with respect claim 16, the transitional phrase, “consisting essentially of” is considered as limiting the scope of the claim to the specified materials, since Applicant's specification fails to provide any evidence that any additional layers of materials would materially affect the basis and novel characteristics of the claimed invention. It is apparent that Applicant's invention would still function as intended with an additional layer or layers of materials. see MPEP 2111.03, “Transitional Phrases”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1, 2, 6, 9, 10, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wynne et al. (U.S. Patent 5, 804,757) in view of Andresen et al. (U.S. Patent 6,581,212).
7. In regards to claim 1, Wynne et al (henceforth referred to as Wynne) disclose a stab-resistant insert for protective textile, (note that Wynne teaches a flexible compound body armor as note in abstract of patent) said insert comprising:
 - at least one metal layer of a fabric with metal cords or metal wires. (layer 12 of figure 10 following). Wynne fails to explicitly teach that the wires are woven. However, Andresen et al (henceforth referred to as Andresen) teaches a metal mesh layer with woven wires (col. 3, lines 5-7). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to provide the wires of Wynne in a weave as taught by Andresen, since woven wires increase the overall strength of the mesh;
 - and at least one textile layer (layer 13);
 - said textile layer being in contact with and being connected to said metal layer. Note that Wynne teaches that the metal layer and the textile layers are back to back (see Wynne figure 10);Wynne fails to teach that the layers are connected using an adhesive. However, Fu et al (henceforth referred to as Fu) teaches multiple layers of a ballistic laminate

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where an adhesive is used between layers to connect the layers (col. 4, lines 48-55). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to utilize an adhesive between the layers of Wynne as taught by Fu to provide a ideal means of permanently connecting the layers together;

- wherein said textile layer comprises a non-woven material. Note that Wynne teaches that the textile layer is comprised of either a woven or non-woven material (col. 7, lines 17-22);
- metal cords or metal wires being the only stab-resistant elements. Note that each element of the armor disclosed by Wynne is inherently resistant to stabbing, slicing, penetration etc. to at least some degree as are each of the component elements of Applicant's invention (i.e. wire, textile, adhesive layers). Applicant is reminded that even if the stated purpose of a component is unrelated to armor or penetration resistance, any of the components taught by Wynne or claimed by Applicant are capable of providing some degree of resistance to a ballistic projectile or the stabbing point of a knife;
- Note that requiring the stab-resistant insert to consist of "at least" various components fails to limit the scope of the claim to consisting of "only" the claimed subject matter, since "at least" implies that the apparatus may include other components;
- the insert is formed without plate-like elements. Note that the "insert" of Wynne is formed of layers of wire mesh and ballistic fabric which does not constitute "plate-like" elements.

8. In regards to claims 2, Wynne fails to explicitly disclose that the fabric is comprised of metal cords or metal wires lying in parallel or that the distance between said metal cords or metal wires varies between 0.40 mm and 3.2 mm. However, Andresen discloses a wire mesh for a protective garment with a layer of metal wires lying in parallel and with spacing between the metal wires of between 0.05mm and 0.45mm (col. 6, lines 32-40). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to utilize metal wire mesh for Wynne with variations of weave, knit, braid etc configurations (i.e. parallel orientation of wire strands) and with various distances between the wires including 0.05mm to 0.45mm as taught by Andresen et al, to provide a mesh with tailored to a specific application and further to provide means to stop various size sharp objects from penetrating the garment.

9. In regards to claim 6, Wynne as modified by Andersen discloses that at least one metal layer is multi-directional (see Andersen figures 1 and 2 following). Note that the metal layer construction, when modified by Andersen, teaches a wire mesh layer with "multiple directions".

10. In regards to claims 9 and 10, Wynne teaches using a high density polyethylene non-woven fiber for a layer of a ballistic armor device (col. 7, lines 17-23).

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11. In regards to claim 12, Kim inherently disclose a protective textile product comprising a stab-resistant insert according to claim 1, since the material disclosed by Kim constitutes a "stab resistant insert" to the degree specified by Applicant.

12. In regards to claim 18, Wynne discloses a stab-resistant insert for protective textile, said insert comprising:

- a stab-resistant element. Note that any of the layers of Wynne constitute a "stab resistant element", since any material will provide a degree of stab resistance to at least some degree;
- one or more textile layer (layer 13 of Wynne figure 10);
- wherein the one or more textile layer comprises a non-woven material.

Note that Wynne teaches that the textile layer is comprised of either a woven or non-woven material (col. 7, lines 17-22;

- wherein the stab-resistant element consists of one or more metal layer of a woven fabric with metal cords or metal wires. (layer 12 of figure 10 following).

Wynne fails to explicitly teach that the wires are woven. However, Andresen et al (henceforth referred to as Andresen) teaches a metal mesh layer with woven wires (col. 3, lines 5-7). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to provide the wires of Wynne in a weave as taught by Andresen, since woven wires increase the overall strength of the mesh

- wherein the one or more textile layer is in contact with and connected to

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said one or more metal layer. Note that Wynne teaches back to back textile and metal mesh layers. Wynne fails to teach that the layers are connected using an adhesive. However, Fu et al (henceforth referred to as Fu) teaches multiple layers of a ballistic laminate where an adhesive is used between layers to connect the layers (col. 4, lines 48-55). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to utilize an adhesive between the layers of Wynne as taught by Fu to provide a ideal means of permanently connecting the layers together .

13. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wynne et al. (U.S. Patent 5, 804,757) in view of Andresen et al. (U.S. Patent 6,581,212) as applied to claim 2 above, and further in view of Brillhart et al. (U.S. Patent 6562435).

14. In regards to claim 3, Wynne as modified fails to disclose that the metal layer comprises elongated metal elements that are unidirectional within said metal layer. However, Brillhart et al (henceforth referred to as Brillhart) teaches deploying fibers in a parallel unidirectional orientation per layer (see Brillhart et al fig. 3 following). It is old and well known and would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to orient the reinforcing strands of the modified Wynne apparatus in a unidirectional manner per layer as taught by Brillhart et al, to provide maximum axial load strength per layer.

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15. In regards to claim 4, Wynne as modified fails to explicitly disclose that the insert comprises more than one metal layer. However, Andresen teaches using multiple wire layers (col. 5, lines 58-62). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate more than one layer of wire in the metal layer of Wynne as taught by Andresen, to enhance the stopping capability of the garment.

16. In regards to claim 5, Wynne as modified by Andersen and Brillhart discloses that the elongated metal elements of one metal layer run in a different direction than the elongated metal elements of another metal layer. Note that the Wynne as modified by Andersen teaches multiple layers each with elements "running" in at least two different directions (col. 5, lines 58-67).

17. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wynne et al. (U.S. Patent 5, 804,757) and Andresen et al. (U.S. Patent 6,581,212) and Brillhart et al. (U.S. Patent 6562435) as applied to claim 3 above, and further in view of Toulmin, Jr. et al. (U.S. Patent 2758952).

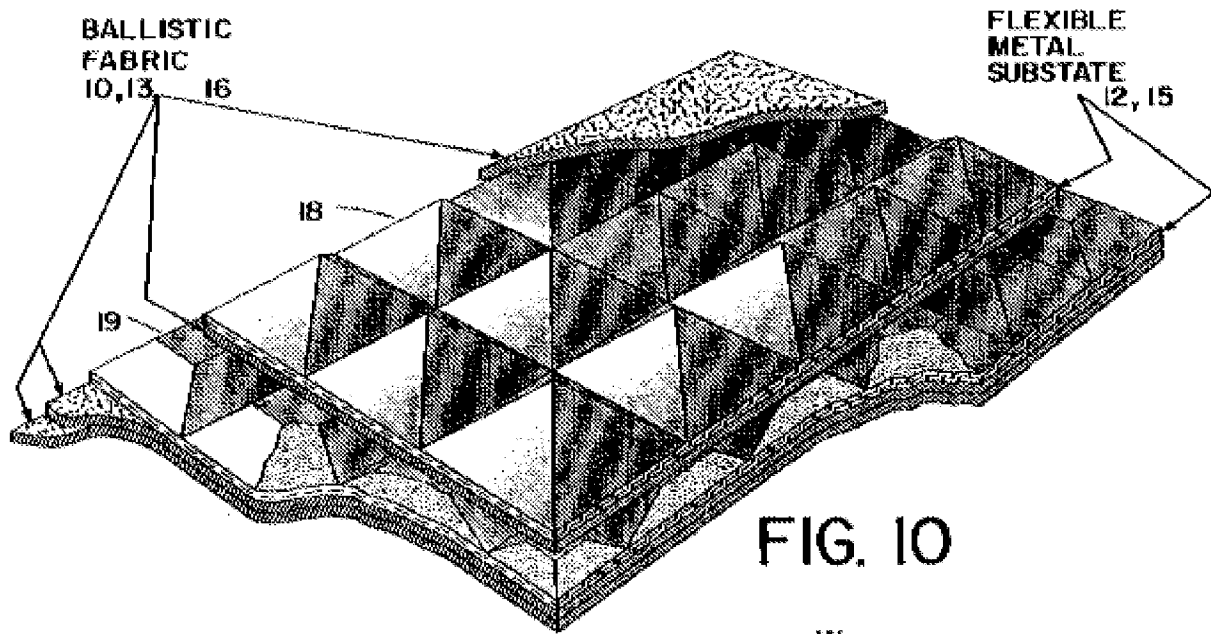
18. In regards to claim 8, the modified Wynne reference fails to disclose that a part of said non-woven material penetrates between the elongated metal elements to decrease the likelihood of shifting the elongated metal elements in said metal layer. However, Toulmin, Jr. et al (henceforth referred to as Toulmin, Jr.) teaches a metal wire mesh

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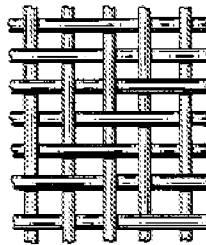
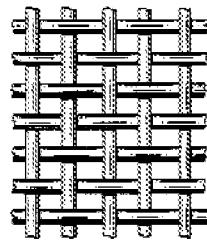
with a mat of fibers overlying where some of the fibers extending through openings in the wire mesh (col. 9, lines 55-75). It would have been obvious to one ordinary skill in the art at the time of Applicant's invention to intertwine or penetrate the metal mesh layer(s) with the textile layer of Wynne as taught by Toulmin, Jr., to increase the strength and impart a cohesive relationship between the layers.

19. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wynne et al. (U.S. Patent 5, 804,757) and Andresen et al. (U.S. Patent 6,581,212) as applied to claim 1 above, and further in view of Fisher et al. (U.S. Patent 6,807,891).

20. In regards to claim 11, Wynne fails to explicitly teach that each metal layer is at both sides in contact with and is connected with a textile layer comprising non-woven material. However, Fisher et al (henceforth referred to as Fisher) teaches overlaying multiple layers of alternating fabric and wire mesh (col. 4, lines 45-58 and col. 6, lines 19-28) which constitutes a metal layer in contact at both sides with a textile layer. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate alternating multiple layers of wire mesh and fabric as taught by Fisher in the laminate material of Wynne to increase the penetration resistance.



Wynne



Andersen

Summary/Conclusion

21. Claims 1-6, 8-12 and 16-18 are rejected.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin P. Lee whose telephone number is 571-272-8968. The examiner can normally be reached between the hours of 8:30am and 5:00pm on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/B. P. L./

Examiner, Art Unit 3641

/Michael J. Carone/

Supervisory Patent Examiner, Art Unit 3641